A Summary of Observing Stack Testing

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BAR

The mission of the Bureau of Air and Radiation (BAR) at the Kansas Dept. of Health and Environment is to protect the public's health and environment from air pollution. Observing stack testing is one action the BAR undertakes to provide the State of Kansas's quality assurance for clean air.

Stack testing is defined as a standardized procedure of actions using calibrated tools to determine a rate of concentration in order to verify emissions from a source. These emissions are specific pollutants or a pollutant being emitted through regulated stacks at facilities subject to the requirements of the Clean Air Act (CAA). Stack testing is used to determine the facility's compliance with emission limits. Stack tests are conducted for varying purposes, such as Relative Accuracy Test Audit (RATA), linearity checks, performance tests using Federal Reference Methods, and routine calibration of Continuous Emission Monitoring (CEM) equipment.

The BAR has state officials who observe stack testing to ensure that the regulatory testing requirements are being met. The observer will travel to the facility and observe the stack testing consultants to make sure that they are following the approved test protocol; results are being accurately and completely recorded and documented in the report. Also the state representative on site helps reduce the likelihood of sample recovery errors, equipment faults, and to ensure that the testing is conducted under the proper process conditions.

There are many factors of stack testing that are observed during a performance test that can alter the results. The following items are considered additional guidance for the data collection phase beyond the requirements provided in the individual Test Methods:

Units - Units of data collection shall be consistent with the Test Method and within the test report, and units must also be consistent with previous information supplied for the facility.

Traverse Distances - The traverse point locations shall be clearly marked on the probe or Pitot tube and shall include the port length, when applicable.

Cyclonic Flow - Testing for the absence of cyclonic gas flow must be performed prior to the test and the results shall be presented in the test report.

Permanent Data Record Keeping - Non-erasable ink must be used to record data. In the event of an error, the data taker crosses through the erroneous value with a single line, records the correct value above it, and initials the change. Strip charts and data-logger data must be clearly identified with the date, test start/stop times, parameters being recorded concurrently (with a clear and concise method of identifying each), span values, test run number, and individual tracking the data.

Sample Identification and Handling - All samples and filters must be labeled and uniquely numbered to ensure positive identification throughout the sampling and analysis procedures. Identification shall be provided for each container with the number of the container recorded on the field forms, the chain of custody sheets, and on the analysis data forms. Chain of custody sheets will be updated any time a sample changes hands.

Reagent/Filter Preparation - Reagents and pre-weighed filters must have a maintenance record, listing the date, the person by whom it was prepared, and any standardization calculations of reagents. This documentation must be included in the test report.

Records Retention - Test teams shall be aware that the records retention requirement for sources is a minimum of five years. Thus, any field notes, laboratory analysis sheets and original data sheets shall be retained for this period**.**

Number of Test Runs - In accordance with 40 CFR 60 Section 60.8, each performance test is to consist of three separate test runs, and the arithmetic mean of the results shall apply.

Data Witnessing - The Department attempts to provide a regulatory observer for each performance test. In the event that the Department has approved testing without a regulatory observer present, velocity traverse and Method 5 data sheets, when used, shall be transmitted to the Department by facsimile within 24 hours of completing each test run.

Time Keeping - All field data sheets shall document the exact starting and stopping times for each set of data collected.

Sample Time/Sample Volume - Unless otherwise specified in a Test Method, permit conditions or written approval, the minimum sample time is 60 minutes per test run. When sample volumes are not part of the Test Method, at least 30 dry standard cubic feet (dscf) shall be sampled for each test run.

After the test is conducted the facility will send the test report to the Air Compliance and Enforcement Section of the BAR, where it will be analyzed. Then a determination for the pass or fail of the report will be created and mailed to the facility. If the test report fails, another performance test will have to be achieved to satisfy the federal regulations.